

## 108. *A new Triclad Turbellarian.*

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The planarian serving as basis for this brief note was discovered in fair abundance in the collection made by means of a tow-net among such water plants as *Ceratophyllum* and *Potamogeton* on the coast of the Arakawa, about 20 miles distant from the estuary but still within the limits of the tidal action. Though presenting some affinity with Wilhelmi's Cercyridae and Kaburaki's Cercyrinae, it is widely different from any of the species recorded hitherto in its peculiar structure of the reproductive organs. Without doubt it represents a new genus and species, for which I give the name of *Miropiana trifasciata*.

In the living state the body is elongate-oval in shape, its anterior end being a little broader than the posterior. It measures 1-2 mm. long by 0.2-0.5 mm. across at the broadest part when fully extended. The ground colour of the body is light pink and is marked with three distinct black cross bands on the dorsal side, owing to the presence of densely reticulated dark pigments which lie in the parenchyma just beneath the epidermis.

The two crescentic eyes occupy a position in the anterior black band near the lateral margins of the head and are widely set apart from each other.

The epidermis composed of ciliated cuboidal cells is thickest on the dorsal side, and as it passes over to the ventral side, gradually becomes thinner as far as the middle line. It contains a large number of rhabdites.

The nervous system of this species agrees in the main parts with that of other Triclad and is represented by the central part consisting of the brain and longitudinal trunks as well as by the peripheral part.

The mouth is situated at about the middle of the body. The pharynx, which is inserted at the hind margin of the anterior black band, is somewhat longer than one-fourth the whole length of the body. The anterior main gut trunk is comparatively short and



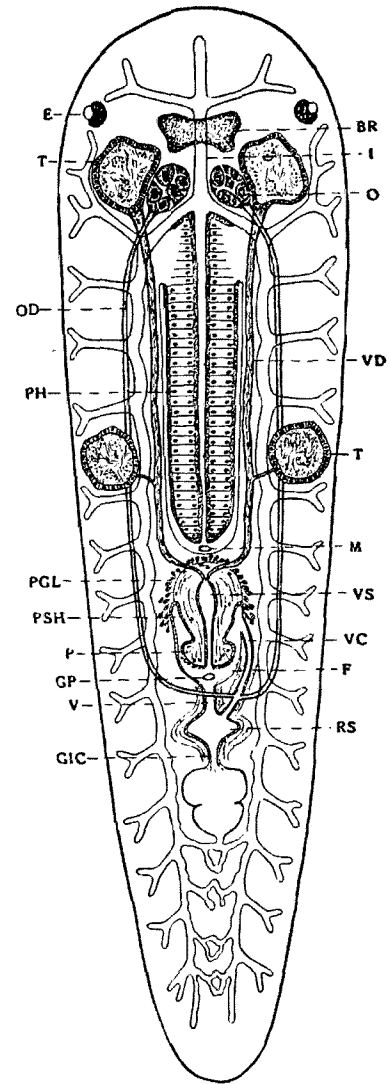
Text-fig. 1.

Semidiagrammatic sketch of *Miropiana trifasciata* n. g., n. sp.

sends out only a single pair of lateral branches, while the posterior trunks each give off 14 lateral branches, some of those inwardly directed joining together the two trunks. Of the excretory canals I have been able to obtain no more insight than some loops and short canals at some points in the dorso-lateral parts of the body.

Behind the mouth at a distance equal to about one-fifth that between the mouth and the posterior end of the body lies the genital aperture which directly leads into the simple atrium continuous with the penis-sheath.

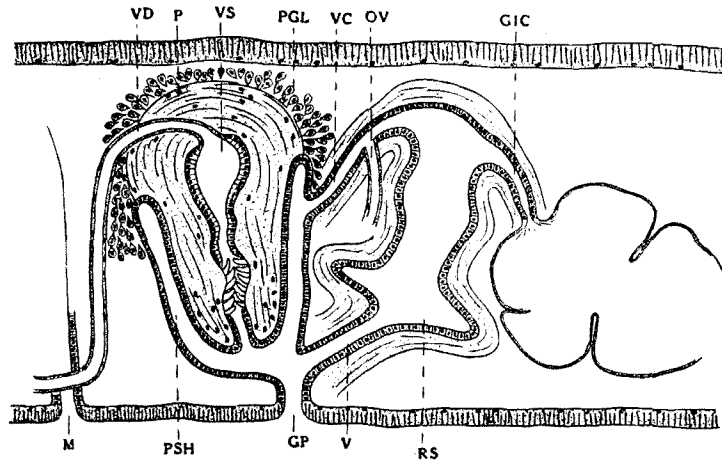
The testes are of a large size and amount to two pairs only, of which one pair occupies a position posterior to the lateral branches of the anterior main gut trunk, and the other occurs between the fourth and the fifth pair of the lateral branches of the posterior trunk. The wall of each testis together with that of the posterior half of the vas deferens is marked with black pigments. The vasa deferentia, which arise from the anterior testes, ran backwards just along the inside of the longitudinal nerve trunks on the ventral side and receive in their course the vasa efferentia from the posterior testes. Near the penis they rise obliquely upwards to open in parallel into the cavity of penis-bulb. The vas deferens is full of spermatozoa throughout its length. The penis consists of the semispherical bulb of strongly muscular nature and the conical intromittent part subvertically disposed in the penis-sheath. The former contains a moderately wide cavity, the seminal vesicle, which passes down into the ejaculatory



Text-fig. 2.

Diagrammatic representation of the organization of *Miroplana trifasciata* n.g., n.sp., as seen from the dorsal side. BR brain, E eye, F furrow extending from the vaginal canal to atrium, GIC genito-intestinal canal, GP genital pore, I intestine, M mouth, O ovary, OD oviduct, P penis, PGL penis gland, PH pharynx, PSH penis-sheath, RS seminal receptacle, T testis, V vagina, VC vaginal canal, VD vas deferens, VS seminal vesicle.

duct opening at the tip of the penis. The ejaculatory duct is armed in the distal part with a number of slightly curved and bluntly pointed spines, each  $3-5\mu$  long. On some occasions this portion is everted as in Text-fig. 2. Embedded in the parenchyma around the penis-bulb are numerous penis-glands, the ducts of which enter the penis at the base and open into the cavity.



Text-fig. 3.

Reproductive organs of *Miroplana trifasciata* n. g.,  
n. sp. in sagittal section, diagrammatically shown.  
Index letters as in Text-fig. 2.

The paired ovary is spherical in shape and occupies a ventral position close to the base of the anterior main gut trunk. Each ovary presents dark pigments in the wall. The vitelline glands are represented by cellular cords with cells arranged in one or more rows; they are extensively distributed throughout the whole length of the body in the interspaces between the gut diverticulae, and stand in connexion with the oviduct at many points. The oviduct of each side starts from the postero-lateral aspect of the ovary. It proceeds straight backwards just along the outside of the longitudinal nerve trunk and bends mediad, at the same time rising slightly upwards, to open immediately into the canal, the vaginal canal, which connects the penis-sheath with the seminal receptacle. The seminal receptacle, which often contains spermatozoa in considerable amount, holds a position posterior to the penis, giving rise at its antero-inferior aspect to the vagina, which runs down to open into the atrium from behind. From the upper part of the receptacle arises a canal, which runs backwards and downwards to open into the inwardly directed lateral branch of the posterior gut trunk and presents a wide saccular space in its course. It is beyond

doubt that the canal represents the genito-intestinal canal, as is found in some Trematods and Turbellarians. Further, extending from the vaginal canal to the atrium on the wall of the penis-sheath is found a shallow groove or furrow.

The present species is highly active as compared with other planarians. Gliding is the most usual mode of its progressive movement. This sort of movement takes place with its ventral surface uppermost along the surface film of water.

In conclusion I would like to express my hearty thanks to Professor T. Kaburaki for his valuable help and advice.

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